

a current sense emitter formed on said opposing side of the semiconductor chip,
wherein electrical current from said collector is made to flow to both said main
emitter and said current sense emitter, and

electron injection efficiency at said main emitter and said current sense emitter is 0.73
or more.

24. (New) The IEGT according to claim 23, wherein said gate is a trench-type gate
embedded in the opposing side of said chip, and

carrier accumulation efficiency of said main emitter and said current sense emitter in
an ON state is greater than that of an insulated gate bipolar transistor (IGBT).

25. (New) A voltage-driven power semiconductor device, comprising:

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cont'd.* a chip-like injection enhanced gate transistor (IEGT) having a collector on one side,
and further having a main emitter, a current sense emitter, and a gate on an opposing side
which opposes said one side, electrical current from said collector made to flow to both said
main emitter and said current sense emitter, and electron injection efficiency at said main
emitter and said current sense emitter being 0.73 or more;

a plate-like collector electrode terminal arranged on said one side of said IEGT and
electrically connected to said collector; and

a plate-like emitter electrode terminal arranged on said opposing side of said IEGT
and electrically connected to said main emitter,

wherein said voltage-driven power semiconductor device is a press-contacting type
package,

said collector of said power semiconductor device is pressed by said plate-like
collector electrode terminal so that said collector and said collector electrode terminal are
electrically connected together, and

said main emitter of said power semiconductor device is pressed by said plate-like emitter so that said main emitter and said emitter electrode terminal are electrically connected together.

26. (New) The IEGT according to claim 25, wherein said gate is a trench-type gate embedded in said opposing side of said chip, and

carrier accumulation efficiency of said main emitter and said current sense emitter in an ON state is greater than that of an insulated gate bipolar transistor (IGBT).

27. (New) A voltage-driven power semiconductor device, comprising:

a chip-like voltage-driven power semiconductor element having a collector on one side, a main emitter, a current sense emitter, and a gate on an opposing side which opposes said one side, electrical current from said collector made to flow to both said main emitter and said current sense emitter, and said gate being a trench-type gate embedded in said opposing side;

— a plate-like collector electrode terminal arranged on said one side of said power semiconductor device and electrically connected to said collector; and

a plate-like emitter electrode terminal arranged on said opposing side of said power semiconductor device and electrically connected to said main emitter,

wherein said voltage-driven power semiconductor device is a press-contacting type package,

said collector of said power semiconductor device is pressed by said plate-like collector electrode terminal so that said collector and said collector electrode terminal are electrically connected together, and

said main emitter of said power semiconductor device is pressed by said plate-like emitter electrode terminal so that said main emitter and said emitter electrode terminal are electrically connected together.

28. (New) The voltage-driven power semiconductor device according to claim 27, wherein said power semiconductor element is an injection enhanced gate transistor (IEGT), carrier accumulation efficiency of said main emitter and said current sense emitter in an ON state is greater than that of an insulated gate bipolar transistor (IGBT), and electron injection efficiency at said main emitter and said current sense emitter is 0.73 or more.

29. (New) A voltage-driven power semiconductor device, comprising:
a plurality of voltage-driven power semiconductor elements connected in series and in parallel, said power semiconductor elements including semiconductor chips and said semiconductor chips having collectors on one side, and main emitters, current sense emitters, and gates on an opposing side which opposes said one side, electrical current from said collectors made to flow to both said main emitters and said current sense emitters;
a plate-like collector electrode terminal arranged on said one side of said plurality of power semiconductor elements, and electrically connected to said collectors; and
a plate-like emitter electrode terminal arranged on said opposing side of said plurality of power semiconductor elements and electrically connected to said main emitters,
wherein said voltage-driven power semiconductor device is a press-contacting type package,
said collectors of said power semiconductor elements are pressed by said plate-like collector electrode terminal so that said collectors and said collector electrode terminal are electrically connected together, and